

Be Aware of Indoor Air

Many research studies report that the amount of pollution inside your home can be much higher than the amount of pollution in outdoor air. While outdoor air is regulated by health standards (called National Ambient Air Quality Standards), there are no enforceable health standards for air inside people's homes.

Most Americans spend about 90% of their time indoors. Unfortunately, most people don't know that poor indoor air quality could cause serious health problems like respiratory illnesses, asthma attacks, high blood pressure, learning problems in children, and in extreme cases, even death. It is important for everyone to be aware of what causes indoor air pollution and to learn about ways to reduce or eliminate the sources of pollution.

For more information, please contact the Indiana State Health Department or U.S. EPA at the links listed below for questions regarding indoor air quality. Or, call the Indiana State Department of Health's Office of Indoor and Radiologic Health, at 317-233-7147.

The information on indoor air pollutants in this article was adapted from the following websites. For more information on specific topics, please visit:

U.S. EPA's Indoor Air Quality Guide,

<http://www.epa.gov/iaq/pubs/insidest.html#IAQHome1>

U.S. EPA's Indoor Air web site, <http://www.epa.gov/iaq/index.html>

IDEM's Integrated Pest Management <http://www.IN.gov/idem/kids/integratedpest.html>

IDEM's Home Lead Assessments <http://www.IN.gov/idem/kids/lead.html>

IN State Department of Health Indoor Air and Radiologic Health

<http://www.IN.gov/isdh/regsvcs/radhealth/welcome.htm>

US Department of Housing and Urban Development's Healthy Homes for Healthy Children project at <http://www.hud.gov/healthy/mainmenu.html>

US Department of Housing and Urban Development's Lead Paint Safety Field Guide

<http://www.hud.gov/lea/LBPguide.pdf>

American Heart Association website on scented candles

<http://www.healthhouse.org/new/candletip.htm>

The following is a list of indoor air pollutants, their sources, health issues, and actions you can take to reduce your risk.

Pollutant	Sources	Possible Health Problems	Actions
Mold	<ul style="list-style-type: none">• Too much moisture in the air.• Wet or moist walls, ceilings, carpets, and furniture.• Poorly maintained humidifiers, dehumidifiers, and air conditioners.	Eye, nose, and throat irritation; shortness of breath; dizziness; lethargy; fever; digestive problems. Can cause asthma; humidifier fever; influenza and other infectious diseases.	<ul style="list-style-type: none">• Find and eliminate the source of moisture.• Clean moldy hard surfaces with bleach or soapy water.• Use dehumidifiers to keep humidity below 50%.• Install and use fans vented to outdoors when using stoves, dishwashers, and

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	<ul style="list-style-type: none"> • Lack of ventilation in kitchens, laundry rooms, or bathrooms. 		<p>clothes dryers and when taking showers.</p> <ul style="list-style-type: none"> • Clean humidifiers in accordance with manufacturer's instructions and refill with clean water daily. • Empty water trays in air conditioners, dehumidifiers, and refrigerators frequently. • Clean and dry or remove water-damaged carpets. • Use basements as living areas only if they are leak-proof and have adequate ventilation.
Lead	Lead-based paint, contaminated soil, dust, and drinking water.	Hyperactivity or learning problems in children. High blood pressure in adults.	<ul style="list-style-type: none"> • Keep areas where children play as dust-free and clean as possible. • Leave lead-based paint undisturbed if it is in good condition; do not dry sand, dry scrape or burn off paint that may contain lead. • Hire a licensed professional to remove lead paint or learn the safe ways to do it yourself. • Wipe feet or remove shoes before entering your home. • If your work or hobby involves lead, change clothes and use doormats before entering your home. • Eat a balanced diet, rich in calcium and iron.
Pesticides	Products used to kill household pests (insecticides, termiticides, and disinfectants). Also, products used on lawns and gardens that drift or	Accidental poisoning, irritation to eye, nose, and throat; damage to central nervous system and kidney; increased risk of cancer.	<ul style="list-style-type: none"> • Use baits, traps, and gels instead of chemical sprays. • Seal cracks and holes to keep bugs out. • Follow all directions on chemical pesticides. Mix or dilute outdoors. Apply only

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	are tracked inside the house.		<p>in recommended quantities.</p> <ul style="list-style-type: none"> • Increase ventilation when using chemicals indoors. Take plants or pets outdoors when applying pesticides to them. • Only buy what you need. Do not store unneeded pesticides inside home; dispose of unwanted containers safely. • Store clothes with moth repellents in separately ventilated areas, if possible, or use cedar boxes or chips. • Keep indoor spaces clean, dry, and well ventilated to avoid pest and odor problems.
Dust and Soot	Fireplaces, woodstoves, candles, pet dander.	Eye, nose, and throat irritation; respiratory infections, bronchitis and increases in asthma attacks; lung cancer; heart disease.	<ul style="list-style-type: none"> • Change filters on heating and cooling systems and air cleaners according to manufacturer's directions. • Avoid burning scented candles (especially with metal wicks), or burn them in your fireplace. If you must use candles, follow the American Heart Assoc.'s tips to reduce air pollution from candles. • Have a trained professional inspect, clean, and tune-up central heating system (furnace, flues, and chimneys) annually. Repair any leaks promptly. • Vent all furnaces and other combustion appliances to outdoors.
Dust mites	Naturally occurring in dust in all homes.	Respiratory illness or infection, allergic reactions.	<ul style="list-style-type: none"> • Remove dust often with a damp cloth. • Vacuum carpet, fabric

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			<p>window coverings, and fabric-covered furniture to reduce dust build-up.</p> <ul style="list-style-type: none"> • Allergic people should leave the area being vacuumed. Using central vacuums or vacuums with high efficiency filters may be helpful. • Wash bedding in hot water.
Radon	Earth and rock beneath home; well water	Lung cancer	<ul style="list-style-type: none"> • Test your home for radon. It's easy and inexpensive. • Fix your home if your radon level is 4 picocuries per liter (pCi/L) or higher. • Call the Radon Hotline for a list of Certified Radon Testers and Mitigators at (800) 272-9723.
Carbon Monoxide and Nitrogen Dioxide	Unvented kerosene and gas space heaters; leaking chimneys and furnaces; back-drafting from furnaces, gas water heaters, woodstoves, and fireplaces; gas stoves. Automobile exhaust from attached garages. Tobacco Smoke.	<ul style="list-style-type: none"> • At low concentrations carbon monoxide causes, fatigue in healthy people and chest pain in people with heart disease. At higher concentrations, impaired vision and coordination; headaches; dizziness; confusion; nausea. Can cause flu-like symptoms that clear up after leaving home. Fatal at very high concentrations. • Nitrogen Dioxide can cause eye, nose, and throat irritation. May cause impaired lung function and increased respiratory infections in young children. 	<ul style="list-style-type: none"> • Keep gas appliances properly adjusted. • Consider purchasing vented appliances when replacing unvented ones. • Use electric space heaters rather than ones that use kerosene or propane. • Install and use exhaust fans vented to outdoors over gas stoves and clothes dryers. • Open flues when fireplace is in use. • Make certain that doors on all woodstoves fit tightly. • Have a trained professional inspect, clean, and tune-up central heating system (furnaces, flues, and chimneys) annually. Repair any leaks promptly. • Do not idle the car inside garage.

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Tobacco smoke	Cigarette, pipe, and cigar smoking.	Eye, nose, and throat irritation; headaches; lung cancer; may contribute to heart disease. For children, increased risk of bronchitis and pneumonia, and ear infections; build-up of fluid in the middle ear; increased severity and frequency of asthma episodes.	Step outside to smoke and do not permit others to smoke indoors.
Organic Gases, or Volatile Organic Compounds (VOCs)	Household products including: paints, paint strippers, and other solvents; wood preservatives; aerosol sprays; cleansers and disinfectants; moth repellents and air fresheners; stored fuels and automotive products; hobby supplies; dry-cleaned clothing.	Eye, nose, and throat irritation; headaches, loss of coordination, nausea; damage to liver, kidney, and central nervous system. Some organics can cause cancer.	<ul style="list-style-type: none"> • Use household products according to manufacturer's directions. • Make sure you provide plenty of fresh air when using products. • Throw away unused or little-used containers safely; buy in quantities that you will use soon. • Keep away from children and pets. • Never mix products unless directed on the label.
Formaldehyde	Pressed wood products (hardwood plywood wall paneling, particleboard, fiberboard) and furniture made with these pressed wood products. Urea-formaldehyde foam insulation (UFFI). Combustion sources and tobacco smoke. Durable press drapes, other textiles, and glues.	Eye, nose, and throat irritation; wheezing and coughing; fatigue; skin rash; severe allergic reactions. May cause cancer. May also cause other effects.	<ul style="list-style-type: none"> • Use "exterior-grade" pressed wood products (lower-emitting because they contain phenol resins, not urea resins). • Use air conditioning and dehumidifiers to maintain moderate temperature and reduce humidity levels. • Increase ventilation, particularly after bringing new sources of formaldehyde into the home.